

ABSTRACT OF THE DISCLOSURE

An imaging system for use with an endoscope, including a light source which emits white light and excitation light which will produce a fluorescence response by an object under inspection, an imaging camera including separate paths for processing images produced by white light and excitation light, a selection device that causes the imaging device to operate in a white light mode or an excitation light mode, and a protective device that prevents damage to high-sensitivity imaging components from exposure to excessive light input. Fluorescent image data are separated into at least red and green color bands which are separately processed to produced a video display in which normal tissue is displayed in predetermined specific color, and abnormal tissue in one or more distinctly different colors. In one embodiment, an image color interpretation guide is provided in the form of multiple color bars which are superimposed on a single video display device with the image display. of different kinds. In another embodiment, color control is provided by adjusting the amplification of the imaging components for each of the color bands while viewing tissue known to be normal using a recursive algorithm until the ratio of the maximum values of the color separation signals fall within a predetermined range. The high-sensitivity imaging components are protected by controlling impingement of light on the imaging components, selectively controlling emission of white and excitation light from the light source, and controlling the power source for the imaging components.